Introduction to DASH

A two-tier approach to decentralization

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Outline

- Brief history
- Main characteristics
  - Masternodes network
- Instant Send
- Private Send
- Governance
  - Blockchain Budget / Treasury
- Evolution

Brief History

- Launched 18 Jan 2014 as XCoin
  - Part-time, hobby project
  - Bug caused 2M coins to be issued very vast
- Renamed to DarkCoin on 28 Feb 2014
  - Promoted as an anonymous coin
- Rebranded as DASH on 25 Mar 2015
  - Digital Cash
  - Focus on becoming a *practical* currency based on *decentralized* governance
- Currently $625M in market capitalization (3th)
- Forked directly from Bitcoin’s codebase
  - Originally forked from Litecoin (a fork of Bitcoin)

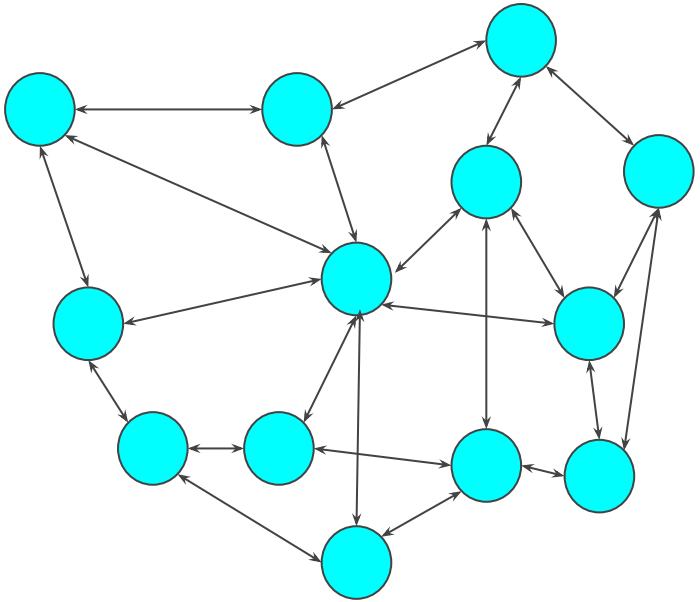
Main Characteristics

- Block reward is about 3.6 DASH
  - 7.1% decrease per year
- Rewarded every about 2.5 minutes
  - 45% / 45% / 10%
- Difficulty adjustment every block
  - Dark Gravity Wave algorithm (impr. of Kimoto’s GW)
- Introduced the X11 hashing algorithm for mining
  - Chains 11 different hashing algorithms
  - ASIC resistant... until recently
- Introduced a two-tier blockchain architecture
  - Masternode network
  - Proof-of-Service
    - decentralized services to the network

Masternodes

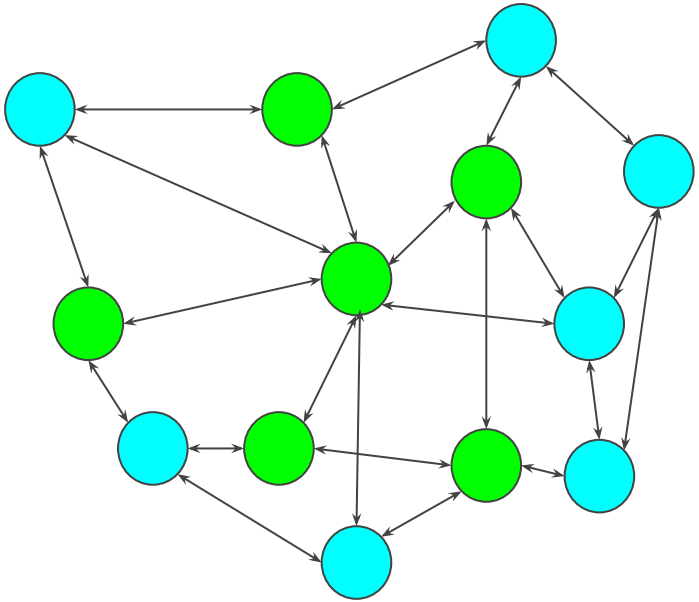
- Mining nodes

Bitcoin



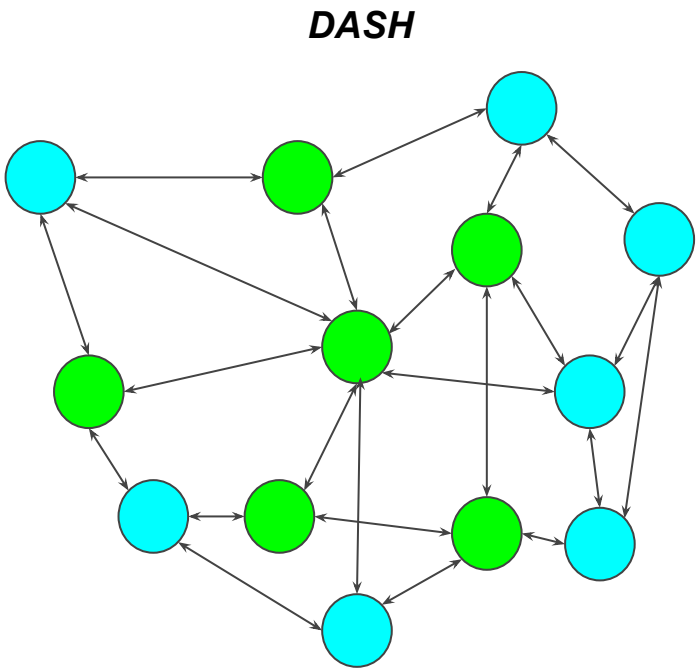
- Mining nodes and masternodes

DASH



Masternodes, explained

- Requires 1000 DASH as stake
- Proof-of-Service
  - PrivateSend
  - InstantSend
  - Decentralized Governance
- Masternode reward program
  - 45%



Next: PrivateSend

PrivateSend

- Send coins anonymously
- Mixes transactions to obfuscate amounts and addresses
- CoinJoin
  - centralized
- CoinShuffle
  - decentralized
- PrivateSend is also an improved CoinJoin
  - decentralized, chaining, denominations, ahead-of-time mixing

PrivateSend, cont.

- Uses standard denominations to obfuscate amounts
  - 0.1, 1, 10, 100
  - from at least three users
- Uses the masternode network
  - random masternode is selected
  - then several more to form a chain
- Each masternode waits for more clients to connect
  - similar denominations

- Takes time to aggregate transactions!

PrivateSend, security

- Note (on 11/11/2016):
  - Current masternode count: 4161
  - Current available DASH: 6,875,945
  - DASH used as stake: 4,161,000

Controlled/Total	Chain depth	% of success $(n/t)^r$	DASH required
100/4161	4	0.000033%	100,000
100/4161	8	0.000000000011%	100,000
2125/4161	4	6.8%	2,125,000
2125/4161	8	0.46%	2,125,000

Next: InstantSend

InstantSend

- Send coins instantly
- Uses masternode quorums
  - a set of 10 masternodes is (deterministically) selected
- Instant tx is propagated
  - Quorum masternodes verify and propagate further
  - Funds are locked on consensus
- No one else can spend locked funds

InstantSend, security

- Note (on 11/11/2016):
  - Current masternode count: 4161
  - Current available DASH: 6,875,945
  - DASH used as stake: 4,161,000

Controlled/Total	% of success $\Pi^{n}_{i=1}((r-(i-1))/(t-(i-1)))$	DASH required
100/4161	4.08×10^{-15}%	100,000
2125/4161	0.11%	2,125,000
2800/4161	1.89%	2,800,000

Next: Decentralized Governance

Decentralized Governance

- Decentralized budget / treasury
  - 10% of all block rewards
- Anyone can make a proposal!
  - and submit to the network
  - description, amount per month / vote start-, end-date
- Masternode owners vote for the proposal
  - if it passes, proposal owner receives funds
  - votes can be changed
- First successful DAO
  - operating from 2015
  - depending on definition Bitcoin was the first DAO

Decentralized Governance, cont.

- Proposals will typically improve network's value
  - masternode owners are stakeholders
- Examples
  - pay core developers!
  - pay developers that enhance the ecosystem
    - create equivalent of localbitcoins for DASH (Dashous)
  - integrate DASH into Lamassu ATMs
  - create youtube videos to promote DASH
    - pay translators
  - Proposals could also stir direction for the network
  - proposal to increase the block size from 1MB to 2MB
    - took 24 hours

Next: Evolution

Evolution

- Focus: User friendliness
- Social Wallet
  - Users (username / password)
  - Merchant apps / Debit payments (auto)
  - Private Funds
  - Savings accounts
    - with Vault functionality (Bitcoin’s!)
- Decentralized API
- DashPay
  - Merchants
- DashDrive

Questions?

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